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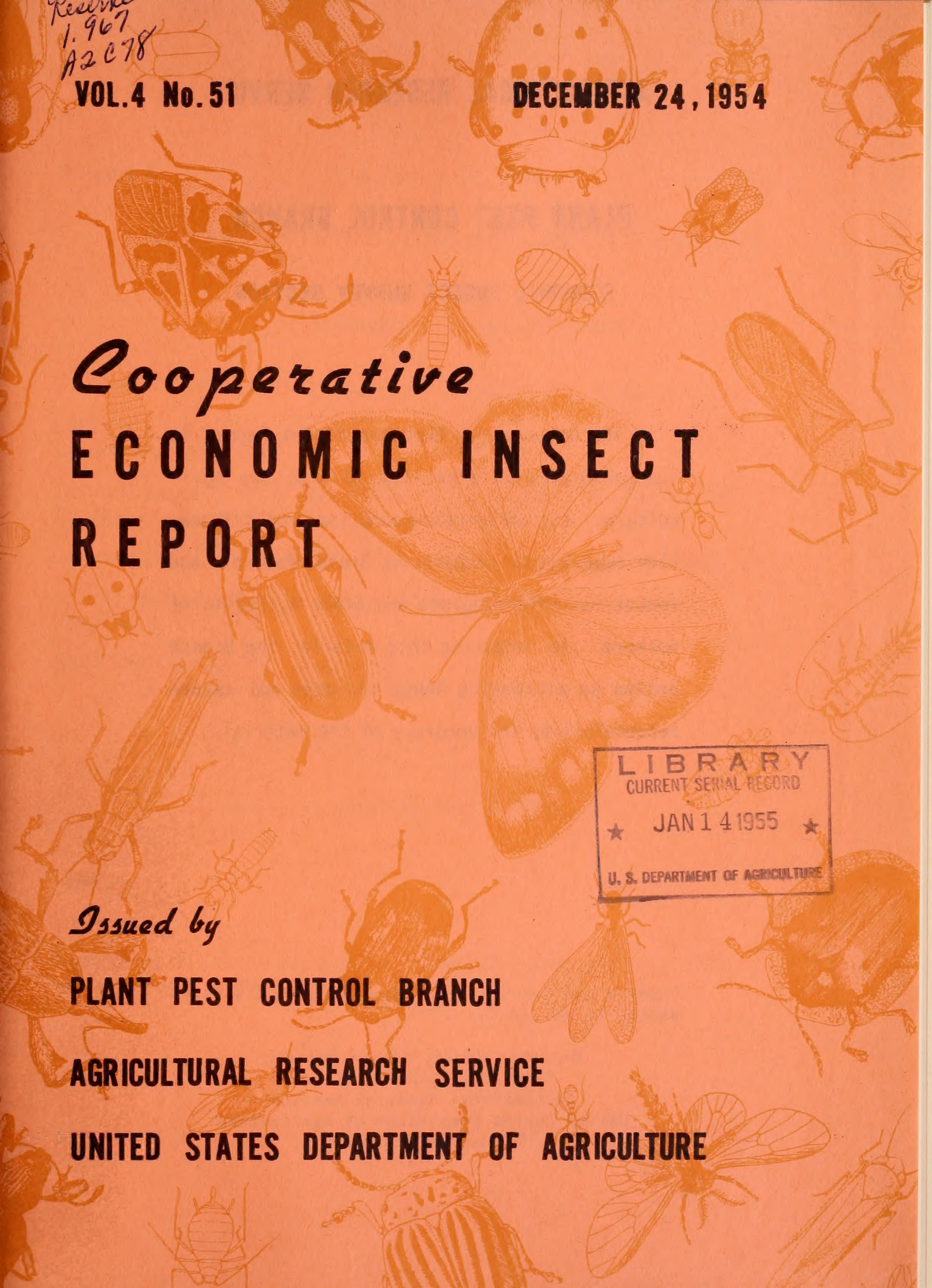

VOL.4 No.51 DECEMBER 24, 1954

Cooperative ECONOMIC INSECT REPORT

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PLANT PEST CONTROL BRANCH
AGRICULTURAL RESEARCH SERVICE
UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL BRANCH

ECONOMIC INSECT SURVEY SECTION

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Branch serves as a clearing house and does not assume responsibility for accuracy of the material.

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Plant Pest Control Branch
Agricultural Research Service
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Washington 25, D. C.

Volume 4 December 24, 1954 No. 51

COOPERATIVE ECONOMIC INSECT REPORT

Highlights of Insect Conditions

STORED-GRAIN INSECT conditions in Louisiana. (page 1099).

CATTLE GRUB populations higher than usual for time of year in Oklahoma. (page 1100).

Collections of WIREWORM adults in Louisiana show new record for that State. (page 1098).

Summary of INSECT CONDITIONS - 1954 - in Ohio. (page 1101).

Survey method for determining APPLE MAGGOT emergence. (page 1107).

ADDITIONAL NOTES (page 1100).

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Reports in this issue are for the week ending December 17, 1954, unless otherwise designated.

WEATHER BUREAU'S 30-DAY OUTLOOK

*Mid-December 1954 to Mid-January 1955

The Weather Bureau's 30-day outlook for the period from mid-December 1954 to mid-January 1955 calls for temperatures to average below seasonal normals over the southeastern quarter of the nation and also in the Great Basin. Above normal temperatures are expected in New England, the Northern Plains, Northwest, and extreme Southwest. In other areas near normal temperatures are indicated. Precipitation is expected to exceed normal along the Atlantic Coast and in the Great Lakes region. Subnormal amounts are predicted for the rest of the country except near normal along the southern border and in the Great Plains.

*This report released by the Weather Bureau on December 17, 1954.

Weather forecast given here is based on the official 30-day "Resume and Outlook," published twice a month by the Weather Bureau. You can subscribe through Superintendent of Documents, Washington, D. C. Price: $4. 80 a year, $2. 40 for six months.

WEATHER FOR THE WEEK ENDING DECEMBER 20, 1954

The week was unseasonably warm in New England and the Middle Atlantic States westward to the Divide and also in central Great Plains except the extreme southern portion. It was unusually warm in the Northern Great Plains where weekly averages ranged from 12 degrees to 18 degrees above normal. In the remainder of the Country, temperatures for the week averaged normal or below with greatest average departures from normal occurring in the area extending from the lower Mississippi Valley to the Atlantic Coast where they ranged from 7 to 9 degrees. Freezing occurred in the Mississippi Valley to New Orleans on the 14th, 16th and 20th and in the extreme southeast including northern Florida on the 15th, 16th, 17th, 19th and 20th with lowest temperatures generally on the 16th when lows in northern Florida were 25 degrees at Tallahassee and 30 degrees at Jacksonville. Tender truck was killed in the lower Mississippi Valley and also that which was left in northern Florida after the previous week's freeze. Sub-zero minima were recorded at a few stations in the northern Rockies, the Upper Great Basin and Great Lakes region the last two days of the period. Precipitation was moderate to heavy along the northern Pacific Coast and east of a line joining Cleveland, Ohio and New Orleans, Louisiana. The rains in the southeastern area were

(Cont. on page 1106)

CEREAL AND FORAGE INSECTS

GREENBUG (*Toxoptera graminum*) - FLORIDA - Some local damage to pangola grass at Davie. (Link).

LUPINE MAGGOT (*Hylemya lupini*) - GEORGIA - Moderate infestation on lupine in Tift County. (Beck).

YELLOW CLOVER APHID (*Myzocallis trifolii*) - CALIFORNIA - Severe injury to alfalfa in Riverside County during November. (Coop. Ins. Pest Rept.).

ARMYWORM (*Psedualetia unipuncta*) - FLORIDA - Larvae infesting grass locally at Davie. (Link). LOUISIANA - Small numbers of moths being taken in light traps on warm nights. (Burns). ARKANSAS - From November 25-December 6 the light trap at Stuttgart operated 9 nights. Total of 101 armyworm adults collected with range of 0 to 48 per night. (Barns, Warren).

FRUIT INSECTS

CITRUS RED MITE (*Metatetranychus citri*) - CALIFORNIA - Medium to heavy in citrus orchards in Orange County. Light to medium in Santa Barbara, San Diego and Riverside Counties. (Coop. Ins. Pest Rept., Nov.). FLORIDA - Still a serious problem in many citrus groves during second week December. Further increase expected. (Pratt, Thompson, Johnson).

SCALE INSECTS - GEORGIA - *Aspidiotus perniciosus* and *A. forbesi* built up during year in Fort Valley area. (Snapp). FLORIDA - *Coccus mangiferae*, *Chrysomphalus aonidum*, *Protopulvinaria pyriformis* noted on mango trees near Avon Park. The latter two species infesting about 2 percent of 40-acre grove. (Wesson). CALIFORNIA - Severe to moderate infestations of *A. perniciosus* in plum orchards in Merced County during November. (Coop. Ins. Pest Rept.).

NAVEL ORANGEWORM (*Myelois venipars*) - CALIFORNIA - General infestation of walnuts over Sacramento Valley during November. (Coop. Ins. Pest Rept.).

CITRUS THRIPS (*Scirtothrips citri*) - CALIFORNIA - Unusually light infestation during spring, summer and fall over entire citrus area in Los Angeles County. (Coop. Ins. Pest Rept.).

APHIDS - CALIFORNIA - Various species unusually heavy in citrus in Los Angeles County in November. (Coop. Ins. Pest Rept.).

FILBERTWORM (Melissopus latiferreanus) - CALIFORNIA - An outbreak of this erratic pest occurred in walnuts over the Sacramento Valley during November. (Coop. Ins. Pest Rept.).

TRUCK CROP INSECTS

SWEETPOTATO WEEVIL (Cylas formicarius elegantulus) - FLORIDA - Adults infesting sweetpotato plants locally in Santa Rosa County. Increase in abundance in last few years. (McCall).

TOMATO PINWORM (Keiferia lycopersicella) - CALIFORNIA - Light cullage in tomato fields in San Diego County during November. (Coop. Ins. Pest Rept.).

CABBAGE CATERPILLARS -FLORIDA - Cold weather and insecticides keeping cabbage looper (Trichoplusia ni) down at Sanford. No imported cabbageworm or diamondback moth observed. (Wilson).

GREEN PEACH APHID (Myzus persicae) - FLORIDA - Infesting 5.5 percent of cabbage plants in one field at Sanford. (Wilson).

STRAWBERRY CROWN MOTH (Ramosia bibionipennis) - CALIFORNIA - Heavy infestations in some strawberry fields in Santa Barbara County during November. Fifty percent of plants killed in one field in San Mateo County. Light to heavy in bush berries in Santa Cruz County. (Coop. Ins. Pest Rept.).

Some Wireworms Collected at Lights 1953-1954: FLORIDA - C. M. Packard at Babson Park collected adult wireworms coming to a 60 watt Mazda frosted light on his back porch during the summer of 1953. On 14 nights between June 6 and September 28, the following number and species were collected: 265 Conoderus vagus, 6 C. aversus, 18 Ischiodontus granosus and 6 Pyrophorus atlanticus. Of these the first has recently become known as of serious economic importance in the southern states, and is probably an introduction from the West Indies or South America within past 30 years. LOUISIANA - This past season J. C. Pritchett of New Orleans submitted wireworm adults collected from a screen door to which they were attracted by fluorescent lights. On 17 nights from June 23 to September 28, the following numbers and species were collected: 360 Conoderus vagus, 24 C. amplicollis, 17 C. bellus, 6 C. rudis, and 5 C. lividus, all of which are of economic importance to vegetable crops of the Gulf regions. Of these C. vagus, amplicollis and rudis are probably introduced since 1900 and have become of increasing importance as crop pests. This is the first record of C. vagus in Louisiana, and as shown by its numbers as compared to others, it must be of more economic importance than is realized. (Lane).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

FALL CANKERWORM (Alsophila pometaria) - PENNSYLVANIA - Rather large numbers of moths emerging and laying eggs in Chestnut Hill area, Philadelphia past several weeks. (Walker).

INSECTS AFFECTING MAN AND ANIMALS

CATTLE LICE - UTAH - Quite a problem now. Control begun in some counties. (Knowlton).

STORED-PRODUCTS INSECTS

STORED GRAIN INSECTS - LOUISIANA - An average taken from samples of corn collected from corn growing areas of the State showed 4.8 percent damage due to stored grain insects. The RICE WEEVIL (Sitophilus oryza) was responsible for practically all this damage. This infestation was compiled from samples collected in the fall and represents the infestation as taken from the field. In mid-September a survey was made of warehouses in the rice-growing area to determine early infestation by stored grain insects. Examination was made on 72 samples of early, mid and late season harvested rice. An average of .18 percent damage due to stored grain insects was found. This damage was divided approximately equally between the RICE WEEVIL and ANGOUMOIS GRAIN MOTH (Sitotroga cerealella). A recent survey of rice warehouses in Arcadia, Jefferson Davis, and Vermillion Parishes revealed approximately 70 percent infested in varying degrees. Infestations in most cases were moderate. Most warehouses were being periodically treated. Most abundant insects were CONFUSED FLOUR BEETLE (*Tribolium confusum*), ANGOUMOIS GRAIN MOTH and RICE WEEVIL. (Burns). ARKANSAS - Survey indicates light numbers of RICE WEEVIL in stored grain this fall. This emphasizes need for close observation of all bins when warm weather sets in. (Barnes, Warren).

CARPET BEETLES - PENNSYLVANIA - Several reports of *Anthrenus verbasci* and *A. scrophulariae* from Philadelphia area. (Menusan)..

MISCELLANEOUS INSECTS

CLOVER MITE (*Bryobia praetiosa*) - PENNSYLVANIA - Abundant on side of a house in Montgomery County. (Menusan, Dec. 12).

BENEFICIAL INSECTS

A KLAMATH WEED BEETLE (*Chrysolina gemellata*) - CALIFORNIA - Eggs numerous on leaves of new basal growth of Klamath weed in Tuolumne County. (Coop. Ins. Pest Rept., Nov.).

ADDITIONAL NOTES

OKLAHOMA - APHID infestation quite heavy in nursery stock in Oklahoma City. (Rogers). In a survey of 15 fields in six counties in north central Oklahoma no GREENBUGS found. (Henderson, Wood). CLOVER APHID (*Anuraphis bakeri*) is very common in alfalfa fields near Stillwater, 922 per 25 sweeps. PEA APHID (*Macrosiphum pisi*) not found in any field sampled. (Caid, Fenton). CATTLE GRUB populations in many parts of Oklahoma are higher than usual for this time of year. Many herds average 50 per animal and some animals have over 100 grubs in the back now. (Howell).

NORTH CAROLINA - NORTHERN FOWL MITE (*Bdellonyssus sylviarum*) infesting hens at Raleigh. (Smith). A SNAKE MITE (*Ophionyssus natricis*) infesting live snakes in an exhibit in the North Carolina State Museum, causing irritations and wounds. (McKeever). A BOXWOOD MITE (*Simplinychus buxi*) infesting boxwood at Roxboro, 2-3 per leaf.

(Continued on page 1106)

SUMMARY OF INSECT CONDITIONS - 1954

OHIO

Reported by T. H. Parks,
Lyle Goleman, E. T. Hibbs,
C. R. Weaver, J. P. Polivka,
C. R. Cutright, R. W. Rings,
J. P. Sleesman, R. B. Neiswander

Cereal Insects

EUROPEAN CORN BORER (Pyrausta nubilalis) first brood was generally light over Ohio. A few scattered fields showed intense accumulation of first-brood borers and severe injury. Accumulation of second brood was greater than last year throughout State. In 1953 there were 62 borers per 100 plants recorded in the fall population survey of 30 western counties; in 1954 there were more than 150 borers per 100 plants in a comparable survey. The 1954 figures indicates more mature larvae in the field now than in fall of 1948, the year preceeding the last severe outbreak of corn borer in Ohio. It is estimated that the corn borer caused about $9,000,000 dollars damage to the total Ohio corn crop. This amounts to about 3 percent of the value of the crop. CORN EARWORM (Heliothis armigera) was more abundant than in recent years in field corn. Sweet corn plantings were severely damaged. CORN FLEA BEETLE (Chaetocnema pulicaria) and Stewart's disease, which it transmits, caused considerable loss to early sweet corn. Production in many fields was greatly reduced. Available control measures were not entirely satisfactory.

CHINCH BUG (Blissus leucopterus) occurred in outbreak numbers in some fields in the northwestern area. Fifteen counties reported mass movement from small grain to corn. The aggregate loss was not heavy but the over-wintering generation of adults was more numerous than usual at corn picking time. HESSIAN FLY (Phytophaga destructor) increased in northwestern counties and visible loss in some fields of Lucas, Ottawa, and Sandusky Counties. ARMYWORMS appeared in wheat in June but too late and too few to cause any economic damage. No control was needed. Wireworm, white grub, and rootworm damage to corn is believed to be possibly lower than usual.

Forage Insects

MEADOW SPITTLEBUG (*Philaenus leucophthalmus*), though heavy, was not as abundant as in 1953. Counts average from less than one per stem to more than four per stem. The northeast section was most heavily infested with infestation grading downward in the southern areas. Rains in May helped the legume hay crop withstand attack. Overall damage to first cutting red clover was estimated at 15 percent reduction in yield, a dollar loss of $7,007,000. Reduction of first cutting alfalfa was about 5 percent, a dollar value of $900,000. About 300,000 acres were treated for spittlebugs and aphids. PEA APHID (*Macrosiphum pisi*) was again abundant on alfalfa, largely in southern half of State and caused stunting and reduced yield. Weather was favorable and populations maintained a high level for a longer period than usual. Though damage was less than in 1953, statewide the reduction in alfalfa yield was estimated to be 2 percent, a dollar value of $360,000. Canning peas were treated for the pest.

Infestations of POTATO LEAFHOPPER (*Empoasca fabae*)were less severe than in 1953 but sufficient to cause considerable loss (5 percent or dollar value of $450,000) to second cutting alfalfa. Third cutting not seriously affected. GRASSHOPPERS were slightly more abundant than normal. More damage to second-crop legumes grown for hay and seed than generally realized. No damage to corn or soybeans. CLOVER ROOT BORER (*Hylastinus obscurus*) continued a pest. Survey of 104 fields in 51 counties revealed average infestation of 3.69 borers per root with average of 67 percent of roots infested. Every field sampled contained root borers. Although damage was less than 1953, the insect contributed to 20 percent loss of yield of second-cutting red clover or dollar loss of $4,682,000. CLOVER WEEVILS (*Hypera nigrirostris* and *H. meles*) larvae were unusually abundant, especially in southern areas. These insects in many cases have reached levels which may be economically important. SWEETCLOVER WEEVIL (*Sitona cylindricollis*) damaged young growth of new seedings in May, little damage later in summer. ALFALFA PLANT BUG (*Adelphocoris lineolatus*) has shown increase in eastern counties where it was previously scarce. Losses due to PLANT BUGS estimated to be 50 percent of alfalfa seed, a crop loss valued at $150,000.

Turf Pests

JAPANESE BEETLE (Popillia japonica) populations continued at a high level in Washington and Lake Counties and in a small section in East Liverpool. In other areas the grub population was below 1953 level. There was a slight increase in WHITE GRUBS (Phyllophaga spp.) in southeastern and mid-central areas. WEBWORMS and CUTWORMS were more numerous than usual in 1954. A few golf course greens were severely spotted by feeding. ANTS were generally more abundant than usual and were active for a longer period than in 1953. NORTHERN MASKED CHAFER (Cyclocephala borealis) damaged lawns in August and September. CHINCH BUGS damaged lawns at Cleveland.

Apple Insects

CODLING MOTH (Carpocapsa pomonella) was the most important apple pest of the year, being much more severe than in 1953. The EUROPEAN RED MITE (Metatetranychus ulmi) was severe in several orchards but generally about normal. The TWO-SPOTTED MITE (Tetranychus bimaculatus) made slight increase over 1953. Both ROSY (Anuraphis roseus) and APPLE APHID (Aphis pomi) were less severe than in 1953. PLUM CURCULIO (Conotrachelus nenuphar) injuries were more abundant than in 1953 but generally was well controlled. The RED-BANDED LEAF ROLLER (Argyrotaenia velutinana) made a rapid upswing after mid-September. Prior to this time damage was quite light.

Losses due to apple insects in Ohio in 1954: Total value of the apple crop in Ohio in 1954 is estimated at $8,000,000. If no insects or disease were present this value would have increased approximately $1,000,000. Of this amount $500,000 may be charged to insects. Damage by the different insects may be allocated as follows:

Codling moth	$325,000
Orchard mites	75,000
Plum curculio	25,000
Red-banded leafroller	25,000
Apple maggot	30,000
Rosy apple aphid	10,000
Others	10,000
TOTAL	$500,000

This does not include the cost of controlling pests that would have destroyed over 95 percent of the original value of $8,000,000 if the crop were untreated. It is estimated that 20 cents per bushel would be a conservative charge for insect control. As the 1954 crop is estimated at 4,000,000 bushels, this means that an additional charge of $8,000,000 is due to insect pests. This could be allocated on the same basis as the foregoing figures. This cost would be:

Codling moth	$520,000
Orchard mites	120,000
Plum curculio	40,000
Red-banded leafroller	40,000
Apple maggot	48,000
Rosy aphid	16,000
Others	16,000
TOTAL	$800,000

This added to the figures showing damage and loss give the following totals:

Codling moth	$845,000
Orchard mites	185,000
Plum curculio	65,000
Red-banded leafroller	65,000
Apple maggot	78,000
Rosy aphid	26,000
Others	26,000
TOTAL	$1,290,000

Stone Fruit Insects

Peaches. Peach insect pests destroyed approximately $127,000 of the $3,750,000 crop according to estimates based upon the 1954 survey of 53 orchards in 17 counties. CAT-FACING INSECTS, principally tarnished plant bug and stink bugs, took by far the largest toll with an estimated $102,000 loss. ORIENTAL FRUIT MOTH (*Grapholitha molesta*) which as recently as 1947 destroyed about $250,000 in peaches, was well controlled during 1954 and accounted for less than 0.3% loss in late season varieties. PLUM CURCULIO was even less injurious than the oriental fruit moth with an estimated loss of $5,250. Losses from PEACH TREE BORER (*Sanninoidea exitiosa*) were estimated at $4,000 and those from LESSER PEACH BORER (*Synanthedon pictipes*) at $6,000. GRASSHOPPERS were more abundant than usual andcaused considerable injury in some orchards. Red-banded leafroller, European red mite, two-spotted mite, and scale insects caused only minor damage during the season. There have been no cases of insecticidal resistance developing in insect or mite populations on peaches in Ohio to date. Plums. The major pests of plum and prunes caused little damage in 1954. A severe infestation of Rhagoletis species (probably pomonella) was observed in Italian prunes at Perry in one orchard. EUROPEAN RED MITE, which had apparently become resistant to parathion, was unusually abundant in one plum orchard at Clyde.

Other Fruit Insects

GRAPE BERRY MOTH (Polychrosis viteana)was more abundant than in 1953.

Vegetable Insects

POTATO INSECTS were well controlled on commercial plantings. The second generation of MEXICAN BEAN BEETLE (Epilachna varivestis) was heavy, but overall population low. CUTWORMS were more abundant than usual and there were large populations of POTATO LEAFHOPPER, which damaged potatoes and beans. Populations of CABBAGE CATERPILLARS were high. STRIPED CUCUMBER BEETLE (Acalymma vittata) numbers were low. There was a light infestation of TWO-SPOTTED SPIDER MITE in midsummer becoming heavy in late summer. APHID infestations were generally light. Five percent of tomato fruits infested on last two pickings by TOMATO FRUITWORM (Heliothis armigera).

Insects Affecting Ornamentals

The insects that seemed most troublesome on ornamentals in 1954 were as follows: JUNIPER SCALE (Diaspis carueli) - Somewhat less troublesome than in 1953, but still abundant. FLOWER THRIPS (Frankliniella tritici) - Very abundant on roses. SPRUCE MITE - On arborvitae, spruce, and juniper. LOCUST BORER (Megacyllene robiniae) - Primarily on spoil banks, but occurred in nearly all trees in thousands of acres. EUROPEAN PINE SAWFLY (Neodiprion sertifer) - Many plantings treated by airplane. EUROPEAN PINE SHOOT MOTH (Rhyacionia buoliana) - Growers of Christmas trees are learning to control it. In rhododendrons the RHODODENDRON BORER (Ramosia rhododendri) and the FLAT-HEADED BORER in maples and other trees have been unusually abundant probably as a result of drought. SPIDER MITES - On many deciduous trees.

Miscellaneous Pests

The following include some of the pests that were more abundant than usual: house flies, termites, box elder bugs, chiggers, Angoumois grain moth, Indian meal moth, elm leaf beetles (very abundant and damaging), grain weevils, clover mite, hackberry psyllids and corn leaf aphids.

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ADDITIONAL NOTES (continued)

CLOVER MITE (Bryobia praetiosa) severe on grass and invading house at Roxboro. (Scott). The above mites determined by Farrier. A PARASITIC MITE (Haemolaelaps megaventralis) - Moderate infestation on poultry at Raleigh. Det. Baker. (Farrier). WIREWORMS - Several species, 20,000 - 60,000 per acre, found in soil following corn, tobacco, and rye, in Columbus and Robeson Counties. (Rabb, Dogger, Guthrie).

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WEATHER (Continued)

highly beneficial in helping to restore normal soil moisture which still remained unsatisfactory despite recent good rains in that area. In the remainder of the Nation precipitation generally amounted to only a few hundredth of an inch or was entirely absent except for a few moderate amounts in the lower Ohio Valley and Great Lakes region. In the western portions of the central and lower Great Plains drought continued to become more critical. Considerable soil blowing occurred from western Nebraska southward through the Texas Panhandle. On Friday and Saturday dust from the latter area filled the air over a large portion of Texas, including coastal areas. Light snow or flurries occurred almost daily last week from the Central and upper Mississippi Valley to the Appalachians extending the previous week's snow cover in the upper Mississippi Valley and Great Lakes Region southward over most of Iowa, northern Missouri, and the Ohio Valley, accumulations for the week generally were only a few inches. In New York State and New England snow depths now are about the same as at the end of the previous week with a few Mountain Stations reporting as much as 12 inches. Rain on the 18th caused a deterioration of ski conditions in northern New England. No important snowfall occurred in the far West. (Summary Supplied by U. S. Weather Bureau).

SURVEY METHODS

Determining Apple Maggot*Fly Emergence

In late August and early September infested apples are placed in a large box having a 1/4 inch mesh wire bottom and raised 10 or 12 inches on corner legs. Under the box a tray with 1-1/2 to 2 inch sides collects the maggots when they complete larval feeding in the apple and drop. Daily and sometimes twice daily the maggots are collected, counted and distributed among the soil boxes. Soil boxes are 1-1/2 x 3 feet (size is not important) with sides 8 to 10 inches high. They are filled with 6 to 8 inches of a good porous soil. Maggots are distributed among the boxes each day rather than putting each day's collection in one of the boxes. The usual number of maggots in each box is 300 or 400. When gathering the maggots from the tray, all prepupae and pupae are discarded and the soil boxes are checked frequently to remove any specimens which fail to enter the soil normally. In late fall the infested soil boxes are placed in or near the orchard and buried even with soil surface. They may be covered with wire or brush to protect them from interference by dogs or other animals. In early June cages are placed over the soil boxes to collect the flies when they emerge. These cages are about 3 feet in each dimension covered with screen wire on at least two sides and cloth sheeting on the top and other sides. The front is attached on two edges with thumb tacks so that it can be folded back to reach in to collect and count the flies. During the emergence season the flies are collected daily. Winter mortality in these cages has ranged from 40 to 60 percent and progressive emergence estimates are based on a 50 percent natural mortality.
(W. D. Whitcomb).

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*Rhagoletis pomonella